AMENDMENT # 1

TO THE

RECORD OF DECISION

FOR THE

VALLEY WOOD PRESERVING SUPERFUND SITE
TURLOCK

U.S. Environmental Protection Agency
Region 9
San Francisco

September 2003

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Valley Wood Preserving Superfund Site
Turlock, Stanislaus County, California

B. Statement of Basis and Purpose

This decision document presents the amended selected remedial actions of the U.S. Environmental Protection Agency (EPA) for the Valley Wood Preserving Superfund Site, located in Turlock, Stanislaus County, California (the Site or VWP Site). These actions have been chosen in accordance with Section 117 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, 42 U.S.C. § 9617, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR § 300.435(c)(2)(ii). This decision is based upon the Administrative Record for the Site.

The lead agency for the remedial effort at this Site is EPA; support agencies are the California Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board, Central Valley Region (CVRWQCB). The state agencies concur with the selected Amendment to the initial soil remedy contained in the Record of Decision (ROD) of the Site. The ground water remedy was modified in December 1994 by an Explanation of Significant Differences (ESD).

C. Assessment of Site

The response action selected in the ROD, as modified by this Amendment, is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances, pollutants, and/or contaminants from this Site which may present an imminent and substantial endangerment to public health or welfare.

D. Description of Selected Remedy

This ROD Amendment modifies the previously selected remedy for treating the contaminated soil at the Valley Wood Preserving Superfund Site. These revisions affect both the cleanup standards and cleanup methodology selected in the 1991 ROD.

This ROD Amendment provides for: a) excavation and off-site disposal of contaminated soil, and backfill of excavated areas with clean soil; b) a new cleanup level for arsenic in soil of 25 milligrams per kilogram (mg/kg); c) elimination of the soluble leachate soil cleanup numbers for arsenic and hexavalent chromium that were based on the Designated Level Methodology (DLM); and d) implementation of institutional controls that prohibit residential use of the Site property and that also ensure that future use is compatible with Site conditions once the remedy has been implemented. Institutional controls may include zoning changes and/or restrictive covenants that run with the land.

Modified Soil Cleanup Remedy

The remedy selected in the ROD to remediate the contaminated soil was to excavate soil above cleanup levels, fix and stabilize the soil, backfill the fixated soil, and cover the affected areas with an asphalt cap. This remedy was the highest cost remedy of the four options considered in the selection process. The ROD established surface (0-4 feet below ground surface) and subsurface (4 feet below ground surface to the water table) soil cleanup levels based on the potential for those soils to leach contaminants to ground water. These soil cleanup levels were based upon residential site usage. Subsequently, EPA learned that the cleanup standards for arsenic were below background. Also, residential use is no longer planned for the Site, and EPA finds the ROD cleanup level for arsenic in surface soils to be overly conservative for an industrial site. EPA is now revising the cleanup level from 2 mg/kg for surface soils to 25 mg/kg for all soil above the water table. This revision is protective of human health from exposure to site soils through direct contact and protective of ground water quality. The cleanup standard for chromium remains at 4 mg/kg for all soil above the water table. Both cleanup standards were determined to be protective of human exposure and ground water; consequently the soluble leachate subsurface cleanup standards have been eliminated.

The remedy in the ROD provides for protective standards but specified that fixed soils would require an engineered cap to be placed on top of the soil. Such a cap would likely preclude residential usage at the Site. The revised cleanup standard is appropriate for a planned industrial land use, and that land use would also provide VWP with some economic resource recovery. The amended remedy is land use appropriate and will require less excavation of soil. EPA believes that this new remedy of excavation and off-site disposal offers a better opportunity for redevelopment of the property.

Institutional Controls

Selected institutional controls, through a combination of agreements, land-use covenants, and/or local ordinances, will ensure that the remaining contaminated areas do not pose a significant risk to public health. The primary institutional control shall be a prohibition of residential use of the Site. This will be accomplished through zoning changes and/or restrictive covenants that run with the land. VWP has already submitted an application to have the Site re-zoned as "planned industrial" which would both effectively prevent the construction of residences on the property, and require local zoning input on the future industrial usage. In addition, VWP has committed to recording a land use restriction to the deed of the property. This restriction would clearly limit future property use to non-residential, commercial activities.

E. Statutory Determinations

The selected remedy is protective of human health and the environment, complies with all federal and state requirements that are applicable or relevant and appropriate (ARARs), and is cost-effective. This remedy utilizes solutions that are permanent, and satisfies Section 121 of CERCLA, 42 U.S.C. § 9621. This ROD Amendment shall become part of the Administrative Record, as required by 40 C.F.R. § 300.825(a)(2) of the NCP.

Because this remedy will result in hazardous substances remaining on-site above health-based levels (specifically, ground water), the Site becomes subject to the five-year review requirement. This five-year review is to provide assurance that the remedy remains protective of human health and the environment. The review will be conducted as long as hazardous substances are present above health-based cleanup levels. The first review is scheduled for five years after startup of the remedial action.

F. Authorizing Signature

Elizabeth J Adams — SEPTEMBER 29, 2003

Elizabeth Adams — Date
Chief, Site Cleanup Branch, Superfund Division

Part 2: DECISION SUMMARY

A. Site Name, Location, and Brief Description

The Valley Wood Preserving Superfund Site (the Site) is located at 2237 South Golden State Boulevard in an unincorporated area of Stanislaus County, California. The Site is an inactive wood preserving facility, and lies roughly 1.5 miles southeast of the City of Turlock's boundary. The Merced County line is about 0.5 miles southeast of the Site. The Site is located within Section 25 of Township 5 South, Range 10 East, relative to the Mount Diablo base and meridian.

The immediate boundaries of the Site are South Golden State Boulevard to the east; a poultry farm to the south; agricultural/residential lots to the west; and a vineyard to the north. The primary land use in the Site vicinity is for agricultural purposes. The agricultural parcels near the Site are about 10 to 20 acres each, with associated residences.

The Site occupies an area of approximately 14.4 acres, and is essentially level. Parts of the Site have been graded to control surface water runoff. Asphalt has been paved over the former wood treating and storage area. The remainder of the Site is unpaved. The entire perimeter of the Site is secured with a 6-foot-high chain-link fence.

Within the Site boundaries, a garage/workshop and a storage shed are located in the northeast corner of the property. Water for domestic usage is obtained from a northeast well, designated VWP-4. The southeast corner of the property holds several corrugated metal buildings, which were formerly occupied by an equipment rental company. Among those buildings are two service/storage-type buildings and a covered work structure. In addition, the property still contains an equipment shed, two large above-ground tanks, a pole barn, an office structure, and a 660,000-gallon tank. The pole barn was used for dipping small wood pieces and may still contain some old dipping tanks. The 660,000-gallon tank was constructed after closure of the wood treating facility. The other wood preserving facilities and equipment have been dismantled and removed.

B. Site History of Contamination and Original Remedy

1. State Activities

Between 1973 and 1979, Valley Wood Preserving, Inc. (VWP) performed wood preserving activities at the Site. Solutions of 1 to 2 percent chromated-copper-arsenate (CCA) were mixed and stored in tanks on the Site. Lumber in loads of up to 20,000 pounds was placed into one of four pressure treatment cylinders, then treated with the solution. After completion of the treatment, the lumber would then be removed from the cylinder and allowed to drip-dry on paved and unpaved areas on the Site. Known contamination sources at the Site include such chemical drippings, other chemical spills, leaking tanks, and on-site disposal practices common to that time.

In 1979, the Regional Water Quality Control Board, Central Valley Region (CVRWQCB)

identified the toxic chemicals chromium, copper, and arsenic on Site, within storage ponds, holding tanks, and in soils (both on-site and off-site). Those same contaminants were also detected in the shallow, unconfined aquifer at the Site. In November 1979, the CVRWQCB issued a cleanup and abatement order to VWP. Then in 1980, the CVRWQCB obtained a preliminary injunction ordering VWP to perform ground water pump-and-treat actions at the Site. VWP commenced soil and ground water sampling in early 1980; however, remedial actions ceased in 1983 due to alleged financial difficulties.

In March 1987, the California Department of Health Services Division of Toxic Substances Control (now known as the California Department of Toxic Substances Control, or DTSC) issued a remedial action order (RAO) to VWP. This order required VWP to conduct a remedial investigation and feasibility study and to develop a Remedial Action Plan (RAP).

2. EPA Activities and the 1991 Record of Decision

In March 1989, the U.S. Environmental Protection Agency (EPA) added the VWP Site to the National Priorities List (NPL), and soon thereafter became the lead agency for the remedial cleanup. EPA remains the lead agency; the DTSC and CVRWQCB are support agencies, with DTSC acting as the lead state agency.

In December 1989, VWP and EPA entered into an administrative order to perform emergency removal actions at the Site. The order required aquifer testing, an interim pump-and-treat system, and the design of a plan for alternate water supplies for affected neighboring residents. In January 1990, VWP commenced the installation of three deep ground water wells to serve as domestic water wells. In May 1990, VWP and EPA entered into a second administrative consent order, requiring VWP to conduct a remedial investigation/feasibility study (RI/FS). This new order superseded the previous 1987 RAO. A baseline risk assessment (as part of this RI/FS) indicated that exposure to ground water contaminated by chemicals from VWP could result in significant health risks. No significant ecological risks were detected. In June 1990, a pump-and-treat system began operation in order to control the migration of the contaminant plume.

In June 1991, the RI/FS was completed. It concluded that: the contaminants of concern in both soil and ground water were hexavalent chromium and arsenic; the ground water plume was mobile and migrating towards domestic wells; additional investigation of the vertical extent of the ground water plume was required; and remedial technologies were available for cleanup.

On September 27, 1991, EPA signed the Record of Decision (ROD). The ROD's remedy for the ground water contamination was electrochemical treatment, in conjunction with the existing pump-and-treat system. Briefly, electrochemical treatment involves passing an electrical current through a contaminated solution. Ions that tend to have a positive charge in solution like chromium and arsenic would selectively migrate to the negatively-charged portion of the system, and then be collected and separated.

The ROD's remedy to combat the soil contamination was a program of excavation, fixation, and on-site disposal. The ROD established various cleanup standards for the contaminants of

concern. For surface soils (defined as 0 to 4 feet in depth) the ROD standards for hexavalent chromium are 4 mg/kg, and 2 mg/kg for arsenic. For subsurface soils (from 4 feet below the land surface down to the water table) the ROD standards are based upon a leachate test. After testing, if the soils' leachate had concentrations of more than 5 parts per billion (ppb) of hexavalent chromium and/or arsenic, that soil would be considered contaminated. For ground water, the ROD standards are 50 ppb for hexavalent chromium and 16 ppb for arsenic.

The remedy selected to address the contaminated soil was to excavate the soil, fix and stabilize the hazardous substances in the soil with a stabilizing agent, and backfill the fixed-soils into the excavated areas. Measures such as covers of clean soil or other capping mechanisms would be taken to protect the surface of the fixed soil from physical decomposition. Institutional controls were required to ensure that future land-use practices would be compatible with the fixed-soil. Based on information available at the time that the ROD was developed, it was estimated that 15,000 cubic yards of soil would have been subject to remediation.

In the 1991 ROD, the cleanup standards for soil were developed based on applicable or relevant and appropriate requirements (ARARs) and health protection criteria. The surface soil cleanup standards were based on potential health risks from inhalation and direct contact, assuming unrestricted Site use (e.g., residential use). The standards were set at 4 mg/kg for hexavalent chromium and 2 mg/kg for arsenic, which corresponded to a 1×10^{-6} excess cancer risk. The cleanup standard set at 2 mg/kg for arsenic was at or below background concentrations in soil in the Site vicinity. The subsurface cleanup standards were based on the protection of ground water from contaminated leachate from the soil. The cleanup standards were set at 5 ppb for both arsenic and hexavalent chromium as measured in the leachate from the subsurface soil. Those levels were based on the Designated Level Methodology for characterizing wastes in soil prepared by the CVWQCB in June 1989.

3. EPA's May 2000 Proposed Plan to Address Soil Contamination

Subsequent to the ROD, EPA recognized that the soil cleanup standards were overly conservative as they were set below or close to background concentrations and were not appropriate for the planned land reuse. The original assumption for the determination of cleanup standards was that future Site use would be residential. This assumption is no longer valid given the proposed zoning changes and commitment by VWP to restrict future residential use via a deed restriction and/or restrictive covenant that would run with the land. Accordingly, EPA proposed soil cleanup standards of 30 mg/kg for arsenic and 10 mg/kg for hexavalent chromium in its May 2000 Proposed Plan. The proposed EPA standards were based upon risk calculations for an industrial site at this location. In addition, EPA believes that the leachate test showed little correlation between measured soil contamination and leachate results; thus making the remedial action difficult to implement. EPA proposed that all soil, regardless of depth of origin, was to meet a single standard, and thereby avoid confusion and/or redundancy. Consequently, the requirement for the leaching test for subsurface soil has been eliminated.

C. Community Participation

Community interest was high during the late 1970's, primarily due to concerns about odors, potentially contaminated domestic wells, and general exposures to on-site chemicals. Since the beginning of remedial activities, the interest level has decreased. Before release of the ROD, EPA encouraged public participation and met the requirements for public participation under Section 113(k)(2)(B) of CERCLA, 42 U.S.C. § 9613(k)(2)(B). Public participation before the ROD included release of the Community Involvement Plan, several facts sheets, community interviews, a Proposed Plan and a formal public meeting.

In accordance with Section 117(a) of CERCLA, EPA solicited public comments in writing on the Proposed Plan for soil remediation from May 4 to June 3, 2000. EPA held a formal public meeting on May 17, 2000 at the Veterans of Foreign Wars Hall in Turlock, California for the purpose of presenting to the public the Proposed Plan for soil remediation at the Site. At that meeting, the Proposed Plan was presented, as well as a summary of detailed information included in the Remedial Investigation and Feasibility Study (RI/FS) reports and other related documents for the Site. Comments from the public comment period, including comments from state agencies, have been included in this document, in the Responsiveness Summary.

D. Basis for the ROD Amendment

Under Section 117 of CERCLA, 42 U.S.C. § 9617, and pursuant to Section 300.435(c)(2)(ii) of the NCP, 40 CFR § 300.435(c)(2)(ii) (55 Fed. Reg. 8666, 8852 (March 1990)), EPA is required to publish a ROD Amendment when fundamental changes are made to a final remedial action plan as described in a ROD. EPA is making these changes to the ROD to: (1) take into account that current and future Site use will exclude residential uses; (2) establish cleanup standards that are appropriate for the Site; (3) account for technical data obtained since 1991; and (4) select a more cost-effective and appropriate remedy, given the changes to the Site's contamination profile.

EPA has conducted risk assessments to estimate the potential health and environmental risks posed by contaminants at the Site. The risk assessments considered the possible exposure risks from contaminants present in both soil and ground water. Results of the risk assessment are presented in detail in the Final Focused Feasibility Study of April 2000.

The VWP Site is an industrial facility. VWP, the owner of the Site, has agreed to land use controls preventing future residential use of the property (the one former residence on the Site has been removed). Moreover, VWP has submitted an application to rezone the property to "planned industrial" (or a similar, non-residential designation). Therefore, EPA evaluated two scenarios in which individuals might be exposed to the soil: (1) potential current and future exposure to workers, and (2) potential current and future exposure to Site visitors. A person from one of these groups could become exposed by inadvertently ingesting soil, breathing in soil particles, or through skin contact with the contaminated soils. This baseline risk assessment did not evaluate past exposures.

EPA assessed these potential risks by: (1) identifying the chemicals present in the soil; (2) characterizing the population potentially exposed to these contaminants; and (3) evaluating the potential health effects resulting from exposure to the contaminated soil. EPA uses protective assumptions and very high safety factors when performing these assessments to ensure that public health is protected.

EPA considers two types of risk: cancer risk and non-cancer risk. Cancer risk is reported as the chance that a person exposed to a chemical will get cancer from exposure during a 30-year period. For example, a cancer risk of one in one million would mean that there is one chance in a million that a person would get cancer because of exposure to the chemical for 30 years. Risks greater than one in ten thousand generally mean that some action must take place at a Site.

Non-cancer risks are measured by what is called a Hazard Index (HI). The HI for a Site is calculated according to the types and amounts of chemicals at a Site and the types of exposures that may occur. If the HI is less than one (1), it is extremely unlikely that a non-cancer health reaction could occur. An HI above one means that adverse effects could happen. The higher the value of the HI, means the greater the chances that adverse effects will occur. Non-cancer risks greater than one generally mean that some action has to be taken at a Site. Non-cancer risks include skin irritation and rashes, eye irritation, nausea, and diarrhea.

At the VWP Site, cancer risks associated with average exposure to soils were 3×10^{-7} which is below levels requiring action to protect off-site residents. Based on land-use controls, there will be no future on-site residents, only on-site workers and visitors. Once the Site is remediated to meet the revised cleanup standards for soil, the theoretical cancer risk for on-site workers and visitors will be less than one in one hundred thousand. This level of risk is within the range of acceptable risks used by both EPA and Cal-EPA.

Hazard indices associated with average exposure to ground water exceeded levels requiring action to protect off-site residents. Arsenic, which is considered carcinogenic if ingested, was not detected in off-site ground water; hexavalent chromium, which is not considered carcinogenic if ingested, was detected in off-site ground water. Impacted off-site water supply wells were replaced with a clean water supply beginning in 1990.

EPA also performed a preliminary risk assessment for potential risks to ecological receptors, such as wildlife or fish. The evaluation indicated that there are no aquatic communities, wetlands, or endangered or threatened species in the Site vicinity. Based on these results, a detailed ecological risk assessment was not required.

It is important to emphasize that the ROD standards for VWP were promulgated based upon potential residential usage of the property and the high concentrations of pollutants. The lower concentrations, lower contaminated soil volumes, and the commitment from the property owner, VWP, to place restrictive covenants on the property and to work with Stanislaus County to rezone the property to "planned industrial" (or a similar, non-residential designation) are the factors that require a change to the ROD, and thus the need for this ROD amendment. Based on the human health and preliminary ecological risk assessment, cleanup standards are established

to be protective of on-site workers, visitors, and ground water quality.

It is EPA's current judgment that the preferred revised remedial alternative identified in the FFS is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

E. Selected Remedy

The following section describes the modifications to the 1991 ROD.

Containment of contaminated soil has been, and will continue to be, achieved through different processes. The ROD of 1991 proposed an excavation, chemical fixation, and on-site disposal option for the cleanup of soil contaminated with the contaminants of concern. In this case, EPA believes that soil excavation and removal is a superior option since the affected soil mass will be permanently removed from the Site and land reuse options will be improved. It is expected that this excavation will also reduce the arsenic and hexavalent chromium available to leach into the ground water. However, during the excavation activity, a potential will exist for arsenic and hexavalent chromium to leach into the ground water. Therefore, to continue the protectiveness of the remedy, it is expected that the ground water pump-and-treat system will continue to operate until the soil and ground water cleanup standards are met.

New Institutional Controls

An important consideration to the cleanup standard is the planned land use or zoning of the property, and the agreed-to restrictive covenants between VWP and DTSC. VWP has agreed to seek rezoning of the property. The Site is currently zoned A-2-10 (general agriculture) in Stanislaus County. This allows one residence for every 10 acres of land. Through a restrictive covenant VWP will not be allowed to divide the parcel that currently comprises the Site. In addition, the need for other restrictions including restrictions on further excavations will be considered. Rezoning of the property to a "planned commercial" (or similar) designation would prevent the construction of residences on the property. This would change exposure routes, potential receptors, and the cleanup standards for the contaminants of concern. It is anticipated that this new land use restriction will be developed with the local governing bodies in accordance with local, county, and state regulations. The cleanup standards and remedies put forth in this document reflect the new "planned commercial" zoning.

F. Remedial Action Objectives

The Remedial Action Objectives (RAOs) describe what the proposed Site cleanup is expected to accomplish. The RAOs for the soil clean up program at the Site remain the same as in the ROD. They are to:

- Protect human health and the environment; and
- Protect ground water quality based on the potential for arsenic and/or hexavalent

chromium in the soils to contaminate the ground water.

EPA has proposed revised soil cleanup standards for the Site. These are 25 mg/kg for arsenic, and 4 mg/kg for hexavalent chromium for all soil. The 1991 ROD presented cleanup levels of 2 mg/kg for arsenic and 4 mg/kg for hexavalent chromium in surface soils. The 1991 cleanup standard for arsenic corresponded to a concentration at or below background levels, and was intended to be protective of human health if the Site was used for residential purposes. The revised cleanup standards were selected to be protective of human health for Site use for "planned commercial" purposes, and are based on the results of a Site-specific health risk assessment. Soil cleanup standards of 25 mg/kg for arsenic and 4 mg/kg for hexavalent chromium are consistent with the revised Site-specific cleanup standard recommended by EPA in an August 26, 1994 letter prepared by EPA entitled "Proposed Soil Cleanup Standards, Valley Wood Preserving Superfund Site" and a March 1997 Memorandum for Record prepared by EPA, entitled "Soil Cleanup Standards, Valley Wood Preserving Superfund Site." The standards have been based upon risk calculations for an industrial facility at this location. The State of California concurs with these soil cleanup standards.

Table 1: Original Soil Cleanup Levels, 1991 ROD

Contaminant	Soil Class	Depth, below ground surface	Leachate Test or Soil Concentration	Cleanup Standard
Arsenic	surface	0-4 feet	Soil Concentration	2 ppm
Arsenic	subsurface	4 ft to water table	Leachate Test	5 ppb
Hex. Chromium	surface	0-4 ft	Soil Concentration	4 ppm
Hex. Chromium	subsurface	4 ft to water table	Leachate Test	5 ppb

Table 2: Revised Soil Cleanup Levels, 2003 ROD Amendment

Contaminant	Soil Class	Depth, below ground surface	Leachate Test or Soil Concentration	Cleanup Standard*
Arsenic	surface	0 ft to water table	Soil Concentration	25 mg/kg
Hex. Chromium	surface	0 ft to water table	Soil Concentration	4 mg/kg

* 1 ppm is almost exactly equal to 1 mg/kg; mg/kg does not depend on temperature and other factors

G. Evaluation of Alternatives under NCP Criteria

1. Summary of Cleanup Alternatives

EPA considered several alternatives to reduce the risk from potential exposure to soil and to protect ground water. Each of the alternatives was compared against the nine criteria established in the NCP.

Alternative 1 – No Action
Estimated Cost = $0 (net present value)

In this alternative no action is taken to clean up the soil at the Site. EPA is required to consider a No Action alternative to serve as a baseline for comparison with other remedial alternatives. There is no cost associated with this alternative. It would provide the least overall protection to human health and the environment. The No Action alternative does not meet EPA remedial action objectives and does not comply with either state or federal requirements.

Alternative 2 – Excavation and Off-site Disposal
EPA's Preferred Alternative

Estimated Cost = $295,000 (2000 net value)

Excavation and Off-site Disposal is EPA's Preferred Alternative. It consists of excavating soil containing arsenic and/or hexavalent chromium at levels greater than the Site cleanup standards. The excavated soil would then be transported to an approved landfill for disposal. The excavated areas would be backfilled with clean soil.

This alternative can be easily implemented and would be the most effective in the long term. It would meet all of the remedial action objectives and can be done in compliance with all state and federal requirements. There would be a slight, temporary risk to the on-site workers involved in the excavations due to the potential of becoming exposed to contaminated soil. However, all workers would be trained according to California health and safety guidelines and would use appropriate protective clothing to reduce the potential of exposure.

The costs for this alternative were estimated to be $295,000 (year 2000 capital cost). There are no annual maintenance costs associated with this alternative. It is estimated that it would take approximately 3 months to implement this solution.

Alternative 3 - Fixation and Capping
Estimated Costs = $362,000 (2000 net value)

This alternative consists of excavating soil containing arsenic and/or hexavalent chromium at levels greater than the Site cleanup standards, treating the soil with cement-like chemicals so that the arsenic and/or hexavalent chromium will be trapped in the soil (i.e., "fixing" the soil), and replacing the fixed soil back into the excavated areas. The areas of fixed and replaced soil would be covered with asphalt to seal them in place.

The excavated soil would be fixed with the treatment chemicals in a treatment system which would be brought on Site. The treated soil would then be tested according to EPA and California requirements before being placed back into the excavation. A cap would be placed over the treated areas to seal all of the treated soil in place and reduce the possibility that people would be

exposed to it in the future.

This alternative can be implemented, as excavation and fixation are proven technologies. It would meet all of the remedial action objectives if the cap were properly maintained. The work can be completed in compliance with all State and Federal requirements. There would be a slight risk to the on-site workers involved in the excavation and fixation due to the potential of becoming exposed to contaminated soil. However, all workers would be trained according to California health and safety guidelines and would use appropriate protective clothing to reduce the potential of exposure. This alternative would be effective in the long term if the cap and land use restrictions were maintained. The local government would become involved to restrict future building and excavation activities.

The total costs for this alternative were estimated to be $362,000 in year 2000 dollars. Of this amount, it was estimated that $21,000 (30-year value cost in 2000) would be required to maintain the cap. It is estimated that it would take approximately 4 months to implement this solution.

2. Nine NCP Criteria

To select a remedy, EPA used the nine criteria set forth in the NCP and CERCLA Section 121 to evaluate each remediation alternative and compare them against each other. The nine evaluation criteria are:

1. Overall Protection of Human Health and the Environment
2. Compliance with ARARs
3. Long-term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility, or Volume through Treatment
5. Short-term Effectiveness
6. Implementability
7. Cost
8. State Acceptance
9. Community Acceptance

Of the above criteria, numbers 1 and 2 are considered Threshold Criteria, denoting that both criteria must be met for a remedy to be considered. The criteria numbered 3 through 7 above are considered Primary Balancing Criteria, reflecting that they are used for further evaluating the remedial alternatives. The criteria numbered 8 and 9 are considered during the final remedy selection process. With an evaluation based upon these criteria, EPA's preferred alternative is *Alternative 2*, Excavation and Off-site Disposal.

Alternative 1 (No Action) provides the least protection to human health and the environment, does not meet State or Federal requirements, and does not meet the remedial action objectives. Thus, *Alternative 1* cannot be selected.

Alternative 2 (Excavation and Off-site Disposal) and *Alternative 3* (Fixation and Capping) can both be implemented to satisfy the Threshold Criteria. The Final Focused Feasibility Study of April 2000 lists the ARARs for this Site. They include the Clean Air Act, the Safe Drinking Water Act, and the Resource Conservation and Recovery Act, among others. Excavation and disposal activities trigger the RCRA Subtitle C ARARs since those actions are considered treatment, storage, and/or disposal. In addition, *Alternative 2* and *Alternative 3* meet the remedial action objectives and share equal short-term effectiveness.

Alternative 2 is ranked higher than *Alternative 3* in long-term effectiveness because contaminated soil will be removed from the Site. *Alternative 3* will require continual maintenance of the asphalt cap and the monitoring of on-site activities in order to remain effective. *Alternatives 2 and 3* will require institutional controls to remain effective.

Alternative 2 is ranked higher than *Alternative 3* in the reduction in toxicity, mobility, and volume. *Alternative 2* would reduce the toxicity and volume of the contaminated soil on Site whereas *Alternative 3* would not. Also, *Alternative 3* would reduce the chemical mobility, but would increase the volume of contaminated soil on Site. On the other hand, *Alternative 2* would reduce chemical mobility by placing the contaminated soil in an approved landfill. *Alternative 3* would not change the toxicity of the contaminants on Site. The fixation process would reduce the mobility but would result in an increase in volume of contaminated soil. *Alternative 2* and *Alternative 3* are equal in terms of implementability, but *Alternative 2* is ranked higher than *Alternative 3* in terms of cost. *Alternative 2* was accepted by the community, based on comments received during the public comment period.

The Final Focused Feasibility Study for the Site provides a more detailed evaluation of each alternative with respect to seven of the nine criteria (except state and community acceptance).

Based on the information currently available, EPA believes that the Preferred Alternative, Alternative 2, meets the Threshold Criteria and meets, or exceeds, the other alternatives in terms of the Balancing Criteria.

EPA expects the Preferred Alternative to satisfy the statutory requirements in CERCLA Section 121(b): 1) to be protective of human health and the environment; 2) to comply with state and federal guidelines and regulations; 3) to be cost effective; 4) to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable; and 5) to satisfy the preference for treatment as a principal element.

3. Support Agency Acceptance

EPA and the State of California regulatory agencies (DTSC and CVRWQCB) have discussed the changes set forth in this Amendment. The CVRWQCB disagreed with the revised soil standards that EPA proposed in April 2000. Since then, DTSC and CVRWQCB have taken active roles in

the decision to revise the standards. Both agencies now concur with the final cleanup standards for soil that are included in this document.

4. Public Participation Activities

EPA held a thirty-day public comment period from May 4 through June 3, 2000. A public meeting was held in Turlock on May 17, 2000, where EPA presented the revised preferred alternative and members of the community had an opportunity to ask questions and comment. All comments received have been included in the Administrative Record for the Site, and are summarized in the attached Response Summary. EPA provided this opportunity to encourage maximum public participation in the Amendment process for the Site, as required by 40 C.F.R. § 300.435(c)(2)(ii).

H. STATUTORY DETERMINATIONS

EPA believes that the soil remedy as modified by this Amendment remains fully protective of human health and the environment, complies with all State and Federal requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the soil remedy satisfies the statutory preference for remedies that employ treatment that permanently and significantly reduce toxicity, mobility, and volume of the hazardous substances located at a Site, consistent with Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1).

PART 3: RESPONSIVENESS SUMMARY

A revised soil cleanup plan, termed the Valley Wood Preserving Superfund Site Proposed Plan (the Proposed Plan) was issued in May 2000. The Proposed Plan described EPA's preferred remedial alternatives for soil cleanup at the Site. In accordance with Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, 42 U.S.C. § 9617(a), EPA announced the Proposed Plan in order to solicit public input. Public comments were requested in writing from May 4, 2000 through June 3, 2000; however, it was emphasized that comments would also be accepted by mail, fax, or over the phone during that 30-day period. In addition, EPA held a public meeting on May 17, 2000 at the Veterans of Foreign Wars Hall in Turlock, California. The purpose of this public meeting was to discuss the Proposed Plan and obtain additional public comments.

A. Summary of Comments Received

1. Comments from Community Members, in italics; EPA response follows

Q: Why is this cleanup taking so long?

A: There is a formal process that EPA must follow. Many of our steps are legally required and may not be waived. On this project, there have also been additional delays due to litigation, funding issues, changes in actions, additional Site characterization, interim systems, and other investigations. Finally, the process of engineering, approving, testing, and running an innovative ground water remediation system also requires a great deal of time.

Q: Why is EPA changing its mind?

A: We are choosing to implement a remedy that is appropriate for a practical land reuse by changing the cleanup standards and controls. The original standards were based upon residential use, and required standards to include the possibility of children and the elderly on the Site for extended periods of time. Sites that are not residential, but instead industrial, have different standards. For example, it is assumed that industrial workers will not sleep overnight at the Site, or make mud pies in the yard. Also, it is important to note that environmental approaches have changed in the last 10-12 years. Improved sampling techniques allow more thorough analyses, with less uncertainty.

Q: What is EPA doing with the soil, and where is the soil going?

A: Contaminated soil that has been excavated must be taken to an approved landfill for proper disposal. Such soil may not be reused. Examples of nearby approved landfills are Forward in Stockton and Chem Waste in Kettleman Hills.

Q: What are the current risks?

A: The primary risk remains contaminated ground water. The remedy in place continues to improve the ground water, with the goal of returning that water to its beneficial use. Residents affected by the ground water contamination have had deeper wells installed by VWP, allowing the residents access to clean water. By being in contact with the shallow ground water, soil contamination continues to be a source of ground water contamination and a principal threat. Both arsenic and hexavalent chromium have the potential to be human carcinogens. At this Site, inhalation and ingestion are the primary pathways for human health concerns, although both contaminants are eye and skin irritants at very high concentrations.

Q: What are the risks to neighbors?

A: For non-carcinogenic hazard, the pathway of greatest concern is ingestion of contaminated ground water. Therefore, it is important to continue to obtain drinking water from the proper, non-contaminated wells. For carcinogenic risks, the cancer risk is based upon a 30-year continual average exposure. For neighbors, that cancer risk was calculated in the year 2000 to be less than 3 in 1 million for adults, and less than 9 in 1 million for children. Both levels of risk are below the levels required for protective actions.

Q: What are the risks to workers and visitors?

A: Based on the new cleanup levels, the theoretical cancer risk will be less than 1 in 100,000.

Q: What is the difference in soil volume for this Proposed Plan versus the old one?

A: The old plan estimated a contaminated volume of 15,000 cubic yards. The new plan estimates a volume of 1,600 cubic yards, based upon the remediation efforts to date.

Q: When will everything be completed?

A: For soil, the cleanup action will require between 6 to 12 months after beginning the work. Based upon the current remedy and pace, the ground water cleanup is expected to require several more years.

Q: Why are you changing the remedy?

A: Subsequent to issuing the ROD in 1991, EPA learned that the cleanup standards for arsenic were below background. Also, residential use is no longer planned for the Site, and EPA found the ROD cleanup level for arsenic in surface soils to be overly conservative for an industrial site. Moreover, since the old remedy was to backfill with the fixated soil, it would leave unsightly mounds of material all over the Site. Finally, this new remedy is considered to be more protective of the neighborhood and the future Site workers, since the contaminated material will be shipped off-site.

Q: How will the workers be protected?

A: All workers on this and similar hazardous waste projects are required to have the OSHA 40-hour Hazardous Waste certification. This training requires knowledge of safety hazards and proper protective measures. Certainly, workers in the field will be required to wear the proper Personal Protective Equipment (PPE). PPE for this project is anticipated to include air masks and other breathing apparatus, hard hats, steel-toed and steel-shanked boots, in addition to either disposable or easily decontaminated protective clothing. The Site will continue to be secured during the cleanup and removal efforts. After the cleanup, there should be no contaminated soil, and therefore no exposure. At that time, the risks should be identical to a normal construction site.

Q: What alternatives were considered?

A: As shown in the Proposed Plan, three alternatives were considered. They are no action, fixation and capping, and the chosen action, excavation and off-site disposal.

Q: What are the cleanup standards for ground water?

A: As established by the 1991 ROD, the ground water cleanup standards are 50 ppb for hexavalent chromium and 16 ppb for arsenic.

Q: How can you be sure that these soil levels are protective of ground water quality?

A: The ground water cleanup and monitoring will continue after the soil cleanup. EPA believes that this soil cleanup will allow the ground water cleanup to proceed faster by removing the pollution source. Therefore, EPA believes that by removing this pollution source, which is capable of entering the ground water, the remaining ground water cleanup will proceed faster and more efficiently.

2. Comments from State Agencies, in italics; EPA comments follow

Q: The State feels that EPA has not demonstrated that the proposed standards meet the State's Applicable or Relevant and Appropriate Requirements (ARARs) for protection of ground water. In particular, the State feels that the leaching test should still be required, and the State also argues for more stringent cleanup standards.

A: EPA and the State have discussed this issue at length since the issuance of the Proposed Plan in 2000. EPA provided additional data supporting the proposed soil cleanup standard for arsenic and eliminating the use of the leaching test at this Site. In addition, EPA believes that for this Site, the leaching tests are not a reliable estimator of either present or future contamination levels. On August 16, 2002, the State concurred with EPA on the selected remedy described in this ROD Amendment. The new soil cleanup levels have been established at 25 mg/kg for arsenic and 4 mg/kg for hexavalent chromium. No leaching tests shall be required.

Q: The state wants assurances that the current monitoring and treatment system will continue, in order to achieve cleanup levels in ground water.

A: EPA intends to continue the current ground water treatment system, but some modifications may be necessary. For instance, unused, unproductive, and/or unnecessary wells shall receive permission to be abandoned per local regulatory guidelines. This will lessen the potential for vandalism, illegal dumping, and damage from equipment and livestock. Leaking or improperly screened wells shall also be repaired or abandoned in order to eliminate faulty data.

Q: The lower standards imply that the contaminated soil levels will be greater than the 1,600 cubic yard quantity mentioned in the Proposed Plan. Should the Proposed Plan be revised to reflect this?

A: The 1,600 cubic yard number is an estimate, and the best guess of EPA at that time. However, EPA believes that the contaminated soils are in localized areas, and mostly at or near the western portion of the property. Thus, EPA does expect the affected soil volume to increase, but the new soil volume is not expected to be anywhere near the 15,000 cubic yards previously estimated.

Q: The State has several requirements and concerns regarding any future Work Plans for the cleanup at the Site.

A: EPA will require a Work Plan for the removal effort at the Site. EPA will actively seek out comments and feedback from the State before any Work Plan is approved. EPA will also attempt to obtain concurrence from the State on any Work Plan, in order to assure that those concerns have been addressed.

Q: The State is concerned about the high levels of sulfates (up to 1070 mg/L) present in some locations.

In the May 2003 sampling, the level of maximum sulfate concentrations in ground water was 351 mg/L. Localized treatments are being discussed as a method to bring those concentrations below the 250 mg/L secondary MCL for California. EPA will continue monitoring sulfate in the groundwater and will take appropriate actions if necessary.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 25, 2003

Memorandum

To: Kathleen Johnson
Branch Chief, Hazardous Waste
ORC

Through: Lewis Maldonado
Senior Counsel

From: Sara Goldsmith
Assistant Regional Counsel

Terry Burton
Remedial Project Manager

Re: Record of Decision Amendment, Valley Wood Preserving Site, Turlock, Stanislaus County, California

This memorandum requests your concurrence with the Record of Decision (ROD) Amendment for the Valley Wood Preserving Superfund Site (the Site) located in Turlock, Stanislaus County, California.

This ROD Amendment modifies the previously selected remedy for treating the contaminated soil at the Site. These revisions affect both the cleanup standards and cleanup methodology selected in the 1991 ROD.

In particular, the ROD Amendment provides for: a) excavation and off-site disposal of contaminated soil, and backfill of excavated areas with clean soil; b) a new cleanup level for arsenic in soil of 25 milligrams per kilogram (mg/kg); c) elimination of the soluble leachate soil cleanup numbers for arsenic and hexavalent chromium that were based on the Designated Level Methodology (DLM); and d) implementation of institutional controls that prohibit residential use of the Site property and that also ensure that future use is compatible with Site conditions once the remedy has been implemented. Institutional controls may include zoning changes and/or restrictive covenants that run with the land.

The original remedy selected in the 1991 ROD to remediate the contaminated soil was to

excavate soil above cleanup levels, fix and stabilize the soil, backfill the fixated soil, and cover the affected areas with an asphalt cap. The ROD established surface (0-4 feet below ground surface) and subsurface (4 feet below ground surface to the water table) soil cleanup levels based on the potential for those soils to leach contaminants to ground water. These soil cleanup levels were based upon residential site usage. Subsequently, EPA learned that the cleanup standards for arsenic were below background. Also, residential use is no longer planned for the Site, and EPA finds the ROD cleanup level for arsenic in surface soils to be overly conservative for an industrial site. EPA is now revising the cleanup level from 2 mg/kg for surface soils to 25 mg/kg for all soil above the water table. This revision is protective of human health from exposure to site soils through direct contact and protective of ground water quality. The cleanup standard for chromium remains at 4 mg/kg for all soil above the water table. Both cleanup standards were determined to be protective of human exposure and ground water; consequently the soluble leachate subsurface cleanup standards have been eliminated.

Selected institutional controls such as land-use covenants and/or local ordinances will ensure that the remaining contaminated areas do not pose a significant risk to public health. The primary institutional control shall be a prohibition of residential use of the Site. This will be accomplished through zoning changes and/or restrictive covenants that run with the land. The current landowner of the Site, Valley Wood Preserving, Inc. (VWP), has already submitted an application to have the Site re-zoned as "planned industrial" which would both effectively prevent the construction of residences on the property, and require local zoning input on the future industrial usage. In addition, VWP has committed to recording a restrictive covenant limiting future property use to non-residential, commercial activities.

The ARARs are principally the Clean Air Act, the Safe Drinking Water Act, and the Resource Conservation and Recovery Act (RCRA), among others. Excavation and disposal activities trigger RCRA Subtitle C since these actions are considered treatment, storage, and/or disposal.

We recommend that you concur with this ROD Amendment. I am available now and Terry Burton should be available after today to answer any questions. Keith has already been briefed on this ROD Amendment.

CONCUR: _____
Kathleen Johnson